

TWIN-SCREWS EXTRUDER

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Abstract

PURPOSE: To sufficiently knead materials easy to deteriorate without thermally deteriorating the same while suppressing the heating thereof in a necessary quantity or more by providing kneading parts having no screw threads formed thereto so as to mutually providing intervals therebetween and forming a large number of projections to the surfaces of the screw cores of the kneading parts in the radius direction thereof so as to arrange rows vertical to a screw axis direction.

CONSTITUTION: The materials supplied from a material supply port is heated and plasticized if necessary and fed toward the material extrusion port of the leading end parts of screws 1, 2 under pressure by the propelling forces of said screws 1, 2. At first, the materials entering screw thread parts 10, 11 receive shearing deformation along a barrel surface 3 and, since the phase interfaces mutually formed by the kneaded materials are gradually oriented so as to become almost parallel to the barrel surface, the increase speed of interface areas becomes slow and the efficiency of laminar flow mixing becomes lower. However, since the materials next enter kneading parts 8, 9 with projections and the rearrangement and rotation of phase interfaces are well performed, the materials going out of the kneading parts to advance to the second screw thread parts are again effectively subjected to laminar flow mixing and effective kneading is achieved.

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